

SECTION 01151

MEASUREMENT AND PAYMENT (LUMP SUM)

0.1 DESCRIPTION OF WORK

- A. Work Included: This Section specifies the general requirements for Measurement and Payment.
- B. Provisions of this Section are augmented by the measurement and payment provisions for specific classifications of construction, materials, and services as specified in the applicable sections of these Standard Specifications, the Contract Specifications and as listed in the Bid Form for a specific contract.
- C. See Specification Section [01322/01324/01325] - CONSTRUCTION SCHEDULE for additional requirements of processing the payment request.

1.2 MEASUREMENT OF QUANTITIES

- A. This Contract is a Lump Sum Contract with Allowance payment items and Add-Alternates. The Lump Sum base bid price shall reflect the total cost to complete the work indicated in the Bid Documents, whether shown or incidental to completing the work in accordance with applicable codes, laws, rules and regulations.
- B. Quantities of various items of work provided shall be determined from the As-Planned Schedule and subsequent Progress Schedules, for purposes of payment, by the Engineer; and by the Contractor for purposes of the certification(s) of work provided that are required by the provisions of Article 1.7.
- C. Upon the completion of Work and before final payment is made the Engineer will determine that all Work is completed according to the approved As-Planned Schedule and subsequent Progress Schedules, as the basis for final settlement.
- D. Method of measurement and computations to be used in determination of quantities of material furnished and of work provided under the Contract will be those methods generally recognized as conforming to good engineering practice.
- E. Unless otherwise specified, the following shall apply:
 - 1. Not used.

2. Not used.
4. Not used.
5. Allowance will not be made for surfaces laid over a greater area than those indicated, or for any material moved from outside the area of cross section and lines shown on the Drawings except when specifically authorized by the Engineer.
6. The term "gauge" when used in connection with the measurement of plates, will mean the U.S. Standard Gauge, except that when reference is made to the measurements of galvanized or aluminum sheets used in the manufacture of corrugated metal pipe, metal plate culverts and arches, metal cribbing and corrugated aluminum pipe, the term "gauge" will mean that specified in AASHTO Designations M36, M167, M196 or M197.
7. When the term "gauge" refers to the measurement of wire, it will mean the wire gauge specified in AASHTO Designation M32.
8. The term "pound" when used in the measurement or payment of any material or work, will mean 16 ounces avoirdupois, based on computed or scale weight.
9. The term "ton" when used in the measurement or payment of any material or work, will mean the short tone consisting of 2,000 pounds avoirdupois. When applicable, materials measured in pounds will be converted to tons.
10. Not used.
11. Not used.
12. Not used.
13. Not used.
14. Not used.
15. Not used.
16. The term "each," when used as an item of payment, such as project markers, right-of-way monuments, and the like, will mean complete payment for the work prescribed for that item.
17. The term "lump sum," when used as an item of payment, will mean complete payment for the work prescribed for that portion of the Contract work under the item, or all work prescribed in the Contract, as the case may be.

18. When a complete structure or structural unit (in effect, "lump sum" work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.
19. The Quantities may be shown on the Contract Drawings for items for which lump sum is the method of measurement. If shown, the quantities are approximate and are shown for estimating purposes only. The Contractor shall ensure that the lump sum price (whether the base bid or lump sum breakdown per Activity (see Construction Schedule section)) includes all labor, equipment and material to provide the Work complete in place.
20. The term "complete in place," when used in the measurement and payment provisions, means the completion of the contract item, including the furnishing of all materials, equipment, tools, labor and work incidental thereto, unless otherwise specified.
21. Rental of equipment will be measured by hours of actual working time and necessary traveling time of the equipment within limits of the Contract or between the source of supply and contract site (but not exceeding 100 miles) except when special conditions or other agreements make some other method of measurement desirable and is specified.
22. When standard manufactured items are specified such as fence, wire, plates, rolled shapes, culvert pipe, and the like, and these items are identified by gauge, unit weight, section dimensions, or other measurements, such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.

1.3 SCOPE OF PAYMENTS

- A. The Authority will pay and the Contractor shall receive and accept the compensation as provided in the Bid Form, in full payment for furnishing all materials, labor, tools and equipment and for performing all work contemplated and embraced under the Contract; also for all loss or damage arising out of the nature of the Work, or from the action of the elements (except as specified in General Conditions), or from any unforeseen difficulties or obstructions which may arise or be encountered during the prosecution of the Work (except as set forth in General Conditions or as otherwise noted in the Contract Specifications) until its final approval by the Authority, and for all risks of every description connected with the prosecution of the Work; also for all expenses incurred by or in consequence of the suspension or discontinuance of the said prosecution of the Work (except as provided in General Conditions), and for any infringement of patent, trademark or copyright, and for completing the Work in an acceptable manner according to the Contract Documents.
- B. Payment of any current estimate, or any retained percentage shall in no way constitute an acknowledgment of the acceptance of the Work or in no way or

degree prejudice or affect the obligation of the Contractor, at his own cost and expense, to repair, correct, renew or replace any defects and imperfections in the construction of, or in the strength of, or quality of materials used in or about the construction of the Work under Contract and its appurtenances, as well as damages due or attributable to such defects; which defects, imperfections or damages shall have been discovered on or before the expiration of the one year guaranty period specified in General Conditions. The Engineer shall be the sole judge of such defects, imperfections, or damages and the Contractor shall be liable to the Authority for failure to correct the same as provided herein. (Also see General Conditions.)

- C. If the "measurement and payment" clause in the Construction Specifications relating to any price in the Bid Form requires that said price cover and be considered compensating for certain work or material essential to the item, this same work or material will not also be measured or paid for under any other pay item which may appear elsewhere in the Specifications.
- D. Except as specifically provided otherwise, no separate payment will be made for any work in fulfillment of the requirements of these Division 1, General requirements nor of the respective Specifications relating thereto, and all cost thereof shall be included in the lump sum bid price .
- E. Except as specifically provided otherwise, no separate payment will be made for any work in fulfillment of the requirements of the Contract Documents. All costs shall be included in the lump sum bid price.

1.4 COMPENSATION FOR ALTERED QUANTITIES

The Contractor is obligated to bid work in a responsive and responsible manner. Prices proposed for the work must be realistic.

1.5 PAYMENT FOR EXTRA WORK

- A. Not used.
- B. Payment for extra work or materials.
 - 1. If the Engineer directs additional work, the Contractor shall submit promptly in writing to the Engineer an offer to do the required work on a lump sum or unit price basis, as specified by the Engineer. Unless otherwise directed, the stated price shall be divided so as to show that it is the sum of: (a) estimated cost of direct labor, materials, and the use of equipment, plus 10 percent of this total for overhead; (b) actual cost of Workmen's Compensation and Employer's Liability Insurance, Health, Welfare and Pension Benefits, Social Security deductions, and Employment Security Benefits and such additional fringe benefits which the Contractor is required to pay as a result of Union Labor Agreements and/or is required by authorized governmental agencies; (c) a reasonable percent of the total (a) and (b) shall be negotiated for profit utilizing the procedure

outlined under this Article, paragraph B.3; (d) the estimated proportionate cost of surety bonds.

2. Unless an agreed lump sum and /or unit price is obtained from above and is so stated in a Supplemental Agreement or an Extra Work Order the Contractor shall accept as full payment for work or materials for which no price agreement is contained in the Contract an amount equal to the following: (a) the actual cost for direct labor, material (less value of salvage, if any) and use of equipment (see below), plus 10 percent of this total for overhead; (b) actual cost of Workmen's Compensation and Employer's Liability Insurance, Health, Welfare and Pension Benefits, Social Security deductions, and Employment Security Benefits and such additional fringe benefits which the Contractor is required to pay as a result of Union Labor Agreements and/or is required by authorized governmental agencies; (c) a reasonable percent of the total (a) and (b) shall be negotiated for profit utilizing the procedure outlined under this Article, paragraph B.3; (d) the estimated proportionate cost of surety bonds. The actual cost of use of equipment (except small tools and manual equipment) will be the actual and necessary operating expenses of such equipment power and fuel for the same, and a reasonable rental for the same as determined by the Engineer.
3. A reasonable percent of the total (a) and (b) for Items 1 and 2 above shall be negotiated for profit on each Extra Work Order utilizing the following weighted guidelines:

(a) Breakdown:

Profit Calculation Summary Chart

FACTOR	WEIGHT	RATE	PROFIT
	(W)	FACTOR	VALUE
		(R=.03 to .08)	
1. Degree of Risk			
General Issues of Concern	x 10		=
Labor Productivity	x 15		=
Pricing	x 15		=
Availability of Materials	x 5		=
2. Relative Difficulty of Work	x 15		=
3. Size of Job	15		=

	x	
4. Period of Performance	15	=
	x	
5. Subcontracting	10	=
	x	
TOTAL	100	

(b) Based on the Factors for each Work Order, the Weight (W) for each Factor shall have a Rate Factor (R) from .03 to .08 as indicated below. The Profit Value (V) shall be obtained by multiplying the Rate Factor (R) by the Weight (W). The sum of the Profit Value column represents the fair and reasonable profit percentage as determined by the Factors of the particular Extra Work Order.

DEFINITION OF PROFIT RATE FACTORS

1. Degree of Risk:

Where the Work associated with a Extra Work Order involves no risk to the Contractor, or the degree of risk is very small, the Rate Factor should be .03; as the degree of risk increases, the Rate Factor should be increased up to a maximum of .08. The Degree of Risk has been determined to include but not limited to the following major factors:

- a) General Issues of Concern
- b) Labor Productivity
- c) Pricing
- d) Availability of Materials

2. Relative Difficulty of the Work involved:

If the modified Work is most difficult and complex the Rate Factor should be .08 and should be proportionately reduced to .03 on the simplest of jobs.

3. Size of job:

If the sum of the modified Work (direct costs) is not in excess of 5% of the base Contract work or \$25, 000, the Rate Factor shall be .08. Work greater than 10% of the base Contract Work or \$50,000 shall have a Rate Factor of .03. Work estimated between 5% (\$25,000) and 10% (\$50,000) shall be proportionately rated from .08 to .03.

4. Period of performance:

A change during the early phases of a contract shall have a Rate Factor of .03 and should be proportionately increased to .08 as the period of impact approaches the substantial completion. Additionally, the Rate Factor shall be >.03 for a time extension less than 10 days to a defined Milestone and as the potential time

extension to a defined Milestones increases the Rate Factor shall also proportionately increase to .08.

5. Subcontracting:

The Rate Factor shall be inversely proportional to the amount of subcontracting. Where 66 percent or more of the Work is to be subcontracted, the Rate Factor shall be .08 and where 90% to 100% of the Work is performed by the Contractor's own forces the Rate Factor shall be .03. If the amount of subcontracting is estimated between 11% and 65% of the Work, the Rate Factor shall be proportionately rated from .08 to .03.

The term "direct labor" shall mean the labor actually expended in performing the required work exclusive of all supervisory labor.

No allowance will be made for general superintendence and the use of small tools, manual equipment, or buildings.

For extra work performed by a subcontractor under this Article, paragraph B.2. above the Contractor shall accept as full payment therefore an amount equal to the following: (a) the subcontractor's cost computed as described above plus (b) an additional 10 percent of such costs. Said subcontractor's cost must be reasonable and approved by the Engineer.

The Contractor shall, when requested by the Engineer, furnish itemized statements of the cost of the work ordered and give the Engineer access to accounts, bills, and vouchers relating thereto, and unless the Contractor shall furnish such itemized statements, access to accounts, bills and vouchers, the Contractor shall not be entitled to payment for which such information is sought by the Engineer.

C. Equipment Rates

In the event there arises the need for determination of costs for use of equipment as part of "actual costs" or "cost of performance" or "damages" under Section 00700, General Conditions; Section 01151, Measurement and Payment, Articles 1.3 and/or 1.5; or under Chapter 30 of the Massachusetts General Laws, such costs for use of equipment shall be established in accordance with the following:

1. "Construction equipment" as used herein means equipment in sound workable condition, either owned or controlled by the Contractor or the subcontractor at any tier, or obtained from a commercial rental source, and furnished for use under the Contract.
2. Allowable hourly ownership and operating costs for Contractor-owned or subcontractor-owned equipment shall be determined as follows:
 - a. Actual cost data from the Contractor's accounting and operating records shall be used whenever such data can be

determined for hourly ownership and operating costs for each piece of equipment, or groups of similar serial or series equipment. Actual costs shall be limited to booked costs of the annual accounting period or periods during which the equipment was utilized on the Contract, and will not include estimated costs not recorded and identifiable in the Contractor's formal accounting records. The Contractor shall afford Authority auditors full access to all accounting, equipment usage, and other records necessary for development or confirmation of actual hourly cost rates for each piece of equipment, or groups of similar serial or series equipment. The Contractor's refusal to give such full access shall invalidate any request or claim for payment of the equipment costs. When costs cannot be determined from the Contractor's records, hourly equipment cost rates may be determined under "b." below.

- b. When the Engineer ascertains that it is not practicable to determine actual equipment cost rates or elements thereof from the Contractor's records, hourly equipment cost rates or elements shall be determined by the use of rate schedules or the formula developed from the "Rental Rate Blue Book" (Volume 1) published by Equipment Watch.:
 - (1) Hourly rates shall be developed by dividing monthly rates by 176 hours per month (the "weekly," "hourly" and "daily" rates listed in the "Blue Book" will not be used);
 - (2) Rates shall in all cases be adjusted by application of Rate Adjustment Tables (machine age adjustment) plus adjustment to eliminate Equipment Overhead plus Regional Adjustment; and
 - (3) Rates shall be further reduced by 20 percent to eliminate duplicate and excessive costs, except that the rates shall instead be reduced by 75 percent to determine standby rates.

The number of hours to be paid for shall be the number of hours that the equipment is actually used on a specific force account activity. The "current revisions" to the Blue Book will be used in establishing rates. The "current revision" applicable to specific force account work will be the "current revision" as of the first day of work performed on that force account work and that rate will apply throughout the period the force account work is being performed. In all cases, the Engineer reserves the right to utilize, in preference to Blue Book rates, equipment cost rates based upon actual costs per accounting records or hybrid rates as described above.

- c. In those cases where a 10 percent additive for overhead is to be superimposed on the equipment costs provided in General Conditions, and Section 01151, Measurement and Payment, Article 1.5, equipment cost rates determined under (a) and (b) shall exclude any overhead costs such as equipment insurance, licenses or taxes. The 10 percent additive shall compensate the Contractor for all overhead costs, including equipment overhead, general superintendence, small tools, manual equipment, field overhead and central office overhead. Where the 10 percent overhead additive is not applicable, overhead items clearly related to equipment, (equipment insurance, licenses, taxes), shall be included in the equipment rates; provided, however, that such costs shall be identified and eliminated from any other direct or indirect costs or damages payable by the Authority under the Contract. No element of profit shall be allowable in equipment cost rates for Contractor-owned equipment; it being understood that a reasonable percent of profit in accordance with Article 1.5, Paragraph B, Item 3 will be superimposed upon equipment costs when called for by the Contract.
3. Reasonable hourly costs of renting equipment are allowable subject to Contractor production of auditable records supporting actual costs incurred, provided further that:
- a. Costs such as fuel, lubricants, and minor or running repairs incident to operating such rented equipment that are not included in the rental rate are allowable.
 - b. Costs incident to major repair and overhaul of rental equipment are not allowed.
 - c. Charges for equipment leased or rented from any division, subsidiary organization under common control, or business under common ownership, ordinarily will be reimbursable to the extent that they do not exceed the actual costs of ownership and operating costs determined as in "2.", above. Rental cost of equipment leased or rented from any division, subsidiary, affiliate of the Contractor under common control, or business under common ownership, that has an established practice of renting out the same or similar equipment to unaffiliated parties, shall be allowed at rates higher than actual ownership and operating costs, provided that the Contractor furnishes the Authority adequate documentation, including the rental and usage records for the same or similar equipment items, demonstrating a reasonable likelihood that the equipment would have been rented out if not used on this Contract, and that the rental rates charged are consistent with rates charged to unaffiliated parties and going market rates. Rental costs under a sale and leaseback arrangement will be allowable only up to the amount the Contractor would be allowed if the Contractor retained title.

4. Equipment cost rates determined in "2." and "3." above shall be exclusive of labor cost of equipment operators. Such costs shall be reimbursable subject to Contractor production of auditable payroll and other records sufficient for determination of hours, pay rates, and reimbursable fringe costs as defined in General Conditions and above.
 5. Except in cases of unit price or lump sum extra work orders approved by the Engineer before the work is done, actual reimbursable hours of equipment usage and operator time must be adequately documented by the Contractor's field and office records maintained during performance of the work in a manner acceptable to the Engineer. Failure of the Contractor to so maintain time records which adequately segregate added equipment hours caused by extra work required by the Engineer, or caused by other Authority actions cited in the Contractor's claim for damages, from other equipment time worked on the Contract, when maintenance of such records would have been feasible, shall constitute a cardinal omission of the Contractor, invalidating any claim for equipment cost reimbursement.
- D. Payment for specialized engineering services which may be required in the performance of extra work and which is not otherwise provided for in the Contract shall be for actual costs to be incurred that comply with the standards of the Federal Acquisition Regulations, Part 31, including (a) direct labor based on hours worked on the Contract at the hourly rates paid; (b) overhead costs based on audited financial statements and other data as may be required by the Authority; (c) ten percent of the total of (a) and (b); and (d) other direct expenses related to the Contract.

1.6 OMITTED ITEMS

- A. Should any item or items of Contract work be determined unnecessary for the proper completion of the Work, the Authority may, upon written notice to the Contractor, eliminate such item or items from the Contract and allowance will not be made for such items so eliminated in making final payment to the Contractor, except for such actual work as shall be done and materials purchased, including the cost of moving in and out the special equipment necessary for work on the eliminated item or items, prior to notification of the elimination of such item or items. The amount of the credit to the Authority shall be determined in a similar manner as described above for payments for extra work. This Article shall also apply to work eliminated from the Contract Documents in the form of a lump sum credit to the Authority.

1.7 PARTIAL PAYMENTS

- A. Monthly, the Engineer will make an estimate in writing of the total amount of the work done to the date of such estimate and the value thereof, including advance payments on materials stores or on hand but not yet incorporated in the Work which may be made as provided in Article 1.8 of this Section. This estimate shall be based on the Contractor's As-Planned Cost/Resource Loaded Schedule and Progress Schedule Updates returned as

“Resubmittal not Required”. The Authority will retain the following from these payments:

1. Five percent of the approved amount of the payment to secure satisfactory performance of the Contract Work.
2. An amount sufficient to cover claims it has against the Contractor.
3. An amount sufficient to cover all demands for direct payment filed by subcontractors under Chapter 30 Section 39F of the General Laws of the Commonwealth.
4. Five percent of the value of all items to be planted in the ground.

The Authority will pay monthly to the Contractor while carrying on the work the balance not retained as hereinbefore provided. No such estimates or payment shall be required to be made when, in the Engineer's judgment, the work is not proceeding in accordance with the provisions of the Contract, or when in his judgment the total value of the work done since the last estimate amounts to less than \$500.00.

- B. The Authority may, at its option, after 50 percent of the Work has been completed and (1) if the work is proceeding in accordance with the approved CPM Construction Plan submitted under Construction Schedule section and (2) is being performed in accordance with the Specifications and the Contract, not retrain the 5 percent to secure satisfactory performance of the Contract Work as provided in Article 1.7A of this Section 01151 on any subsequent payments. The contractor must formally request and seek approval from the Authority to stop retaining the 5 percent. The MBTA Project Office must also submit a memorandum to formally request approval from Contract Administration on the releasing of the 5 percent retainage. However, if the Authority does not retain these monies, it will reimpose this 5 percent retainage on all subsequent payments should the Contractor fail to maintain progress in accordance with the Contract and approved schedule or fail to execute the Work as required by the Specifications and Contract. Retainages withheld under Articles 1. 7A (2) and (3) will remain in effect throughout the Contract Work period as detailed therein. Retainage withheld under Article 1.7A (4) for plantings will be retained until Final Acceptance (Article 1.10).
- C. Partial payments will be made on lump sum contracts, and on lump sum items of a contract if the Contractor requests partial payment of such an item, in accordance with a schedule of the quantities and unit prices for the major components of a lump sum contract or of the lump sum items of a contract, to be submitted by the Contractor and approved by the Engineer prior to making partial payments for such contract or for such items. For lump sum contracts, this schedule of major components shall approximate the activities shown on the CPM Construction Plan required by Construction Schedule section. Each component part shall be considered as including all its concomitance so that the total cost listed for the components is the contract cost for the item. Approval of the schedule by the Engineer shall

not be considered as a guarantee to the Contractor that the quantities shown on the schedule are the approximate quantities actually included in the lump sum items. The schedule is only for the purpose of estimating partial payments, and it shall not affect the contract terms in any way.

- D. The Contractor shall certify in writing on forms approved by the Authority that the work for which payment is included in the estimate in question, has in fact been done.
- E. Whenever the Work is substantially complete, the Authority may, if it considers the amount retained to be in excess of the amount adequate for its protection, at its discretion, release to the Contractor all or a portion of such excess amount and may cause the Contractor to be paid, temporarily or permanently, from time to time, such portion of the reserve as it deems prudent.
- F. When the first partial payment estimate is prepared, the Contractor shall submit to the Engineer a cash drawdown forecast indicating the estimated amount of each partial payment by month, projected through completion of the project. The Contractor shall, with each succeeding partial payment estimate, submit updated cash drawdown forecasts to the Engineer. The forecast is for the purpose of estimating cash requirements.
- G. Massachusetts Bay Transportation Authority-Statement of Payment to Subcontractors Form is included at the end of this Section 01151. It must be completed and signed by authorized contractor representative and submitted to the Authority with each payment request.
- H. With each partial payment estimate, the Contractor shall submit, at a minimum, the following information which is extracted from the As-Planned Schedule:
 - a. Progress Schedule Submittal # that is the basis for the partial payment request
 - b. Activity ID
 - c. Activity Description
 - d. Budgeted cost for each Activity in the Lump Sum contract
 - e. Value completed this period
 - f. Percentage completed this period
 - g. Value completed to date
 - h. Percentage completed to date
 - i. Balance of budgeted cost per activity

j. Separate information must be provided per DBE Subcontractor, including:

1. DBE budgeted cost
2. DBE value completed this period
3. DBE percentage completed this period
4. DBE value completed to date
5. DBE percentage completed to date
6. Balance of DBE value
7. Other information required by MBTA Contract Administration

- I. Failure to provide this information with each partial payment request will result in non-payment by the Authority
- J. All material incorporated into the Work shall become the sole property of the Authority, but this shall not be construed as relieving the Contractor from the sole responsibility for all material and Work under the Contract or for the restoration of any damaged Work or waiving the right of the Authority to require the fulfillment of all the terms of the Contract. The Authority shall retain all rights under the Contract including without limitation the right to reject material subsequently found unsatisfactory and the right to enforce the provisions of Section 5.21 and 5.24 of the Contract.

1.8 PAYMENT FOR MATERIALS STORED OR ON HAND

- A. When requested in writing by the Contractor, allowances may be made on partial payments for certain materials stored or on hand, but not incorporated in the Work, subject to the following terms and conditions.
- B. Upon presentation to the Engineer by the Contractor of copies of paid invoices, advance payments may be made for acceptable reinforcing steel, structural steel, piles, culvert pipe, guard rail, track rails, precast prestressed concrete members, costly machinery items, and other similar nonperishable materials purchased expressly for the Work and delivered on or in the approved storage places at the site, but which materials are not considered as erected or complete in place under the items of the Contract, and for which partial payment would not otherwise be made until such materials and items were erected or complete in place.
- C. The amount to be included in the estimate will be the value of the materials as shown by the certified copies of paid invoices including transportation

and handling costs. However, the Engineer reserves the right to limit payment for such materials when such payment is based upon a standard unit of measure. When contract payments are made on the basis of estimated quantities, payment for material stores or on-hand may be limited to an amount not to exceed the value of ninety percent of the estimated contract quantity.

- D. Before any advance on materials is made as hereinbefore provided, the Authority will require, as security for the incorporation of the materials in the Work, documents from the Contractor transferring to the Authority the absolute legal title to such materials.
- E. However, the transfer of title and the partial payment for such materials shall not in itself constitute acceptance of same nor void the right to reject material subsequently found unsatisfactory as provided in General Conditions, nor in any way relieve the Contractor of his responsibility for satisfactorily furnishing and placing the material in the Work in accordance with the terms of the Contract.
- F. In the event any of such material subsequently becomes lost, stolen, impaired, or damaged, the monetary value of the lost, stolen, impaired, or damaged material as may have been paid for in a current estimate will be deducted from the next estimate, and no further payment will be made therefor until such material has been satisfactorily replaced in accordance with Specification requirements.
- G. If it is impossible due to lack of area on the site or other valid reason, the Contractor may request in writing permission from the Engineer to store materials off the site and still have the materials paid for as materials on hand and the Engineer may approve payment; however, no advance payment for material stores off the site will be made until written approval of the Engineer has been given. This request will state the reason for the request, location of proposed storage site, and methods that will be employed to insure that material is properly protected and will be used on the particular Contract. The amount to be included in the estimate for materials stores off the site will be limited to 80 percent of the value of the materials as shown by the certified copies of paid invoices including transportation and handling costs.
- H. In the case of property not owned or controlled by the Authority, the Contractor shall also lease, or procure a lease, free from encumbrances to the Authority, such lease to be in a form approved by the Authority and to contain provisions for the protection and indemnification by the Contractor of the Authority, its employees and agents, against all claims by reason of such lease or by reason of anything done or permitted in or upon the leased sites. The Contractor shall also take such steps as the Authority may require for the purpose of security and assuring to the Authority the control of such materials, particularly the right to enter upon the property, take possession of such materials and use the same.
 - 1. No advance payment for materials stores or on-hand, but not incorporated in the work, will be made in an estimate when the value

therefor amounts to less than \$10,000 per contract bid item and represents the value of at least fifty percent of the estimated quantity involved as shown in the contract or as determined by the Engineer.

2. Deductions at rates and in amounts which are equal to the advance payments will be made under the appropriate Contract pay items in estimates as the materials are incorporated in the Work.

1.9 SEMI-FINAL ESTIMATE

- A. A semi-final estimate may be made, at the discretion of the Authority, under the following conditions:

1. If, after final inspection has been made, there are any payments or Extra Work items that are in dispute between the Contractor and the Authority, either as to the quantity or value of work provided thereunder, such items or claims may be excluded from the final estimate, and payment for such disputed items may be deferred until such time as agreement has been reached between the Contractor and the Authority or until such claim has been adjudicated. In such case, a semi-final estimate shall be prepared within a period of 65 days after substantial completion of the Contract Work covering the value of Work provided and retained percentage on items of the Contract that are not in dispute and with disputed items or claims excluded but subject to deduction and retention of a sum sufficient to satisfy any and all outstanding claims or liens that have been duly filed by subcontractors and materialmen against the Contractor, or to cover amount of such claims or liens that may have been paid by the Authority directly to others for the Contractor's account (see General Conditions), and subject to deduction and retention from such payment any other amounts to be deducted and retained in accordance with the terms of the Contract. The existence of a dispute between the Contractor and the Authority as to any payment item or items shall not be considered a valid reason for delaying preparation of a semi-final estimate as provided herein.
2. In the event the Contract has been substantially completed and the Contract has been opened to public use by order of the Authority, but final acceptance of the Work is subject to delay because of minor uncompleted items which do not impair the usefulness of the Contract, a semi-final estimate shall also be prepared within a like period of 65 days after the Contract has been substantially completed and placed in public use. Such semi-final estimate shall include an intimate of the value of all Work provided in accordance with the terms of the Contract, including the amount of retained percentage withheld by the Authority from previous periodic payments, but excluding (a) the same deductions and retainage sufficient to cover subcontractors and materialmen's claims and other amounts to be deducted and retained in accordance with the terms of the Contract, as provided by the first paragraph of this Article; (b) an amount equal to the estimated value of the work remaining to be performed and (c) any items or claims for extra Work, or parts thereof, that may be in

dispute; and payment for such excluded items or portions thereof, may be deferred until such remaining work has been satisfactorily completed, or in the case of disputed items or claims until such time as agreement has been reached thereon or such claims have been adjudicated.

1.10 FINAL ACCEPTANCE AND FINAL PAYMENT

- A. When all of the physical work covered by the Contract has been substantially completed (see General Conditions), the Authority will inform the Contractor in writing the date of such final acceptance upon which date the Contractor's responsibility shall cease except as provided in his bond and as provided in General Conditions.
- B. The Engineer shall, as soon as practicable after the satisfactory completion of the Contract, make a final estimate of the amount of work done thereunder and value of such work. Within 65 days from and after the date the Work has been accepted by the Engineer, the Authority will forward to the Contractor a copy of the final estimate or semi-final estimate, as stipulated in Chapter 30 section 39G of the General Laws of the Commonwealth, which will include an agreement form for the Contractor's acceptance. After such acceptance has been filed with the Engineer, payments of the entire sum will be made, so found to be due thereunder after deducting therefrom all previous payments and all amounts to be kept and all amounts to be retained under the provisions of the Contract. All prior partial estimates and payments will be subject to correction in the final estimate and payment. If within six months from the date the final estimate is forwarded to the Contractor, the Contractor has not filed a valid (as determined by the Engineer) written reason(s) for not accepting final estimate, final estimate will be considered acceptable to the Contractor and payment of final estimate made.
- C. Acceptance by the Contractor of the final payment shall operate as and will be a release to the Authority and every member, agent, and employee thereof, from all claim and liability to the Contractor for anything done or furnished for, or relating to, the Work, or for any act or neglect of the Authority or of any person relating to or affecting the Work, except the claim against the Authority for the remainder if any there be, of the amounts kept or retained to satisfy liens or claims pending against the Contractor.